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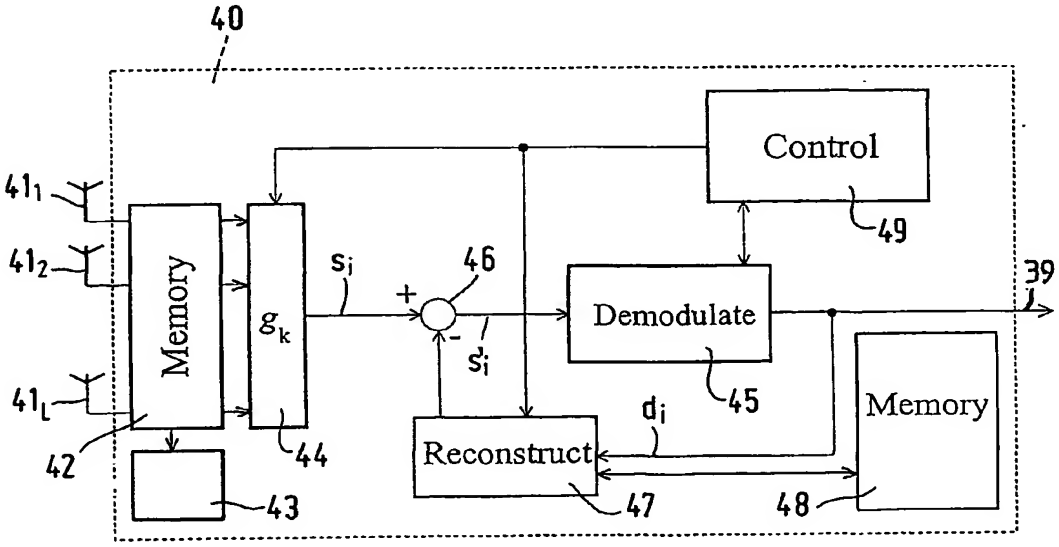
(54) Title: MULTIPLE ACCESS INTERFERENCE CANCELLATION



(57) Abstract: Method and device for interference cancellation. A radio access unit comprises a plurality of directionally separated antenna elements (41_k, K=1, 2, ..., L) for receiving signals transmitted by a plurality of remote units. From signals received by each of the antenna elements (41_k) first weighing factors ($g(1)_k$) are detertmined (49), for optimally selecting signal of a first remote unit (52_1). A first radio signal (s_1) of the first communication unit (52_1) is provided by weighing (44) the received signals using the first weighing factors ($g(1)_k$). For a further radio communication unit (52_i) further weighing factors (g(i)k) are determined. A corrected further radio signal (s'_i) is provided each time by subtracting (46) from the further radio signal (s_i), previously obtained corrected radio signal (S'_{i-1}, S'_{i-1}, ...) weighed by the further weighing factors ($g(i)_k$), till a stop criterium has been satisfied.

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